

# THE PACIFIC COAST ARCHITECT



A·MONTHLY·JOURNAL·FOR·THE  
ARCHITECTURAL·INTERESTS  
OF·THE·PACIFIC·COAST 

	OFFICE OF PUBLICATION	
	PORTLAND OREGON	

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VOLUME 1

MAY, 1911

NUMBER 2



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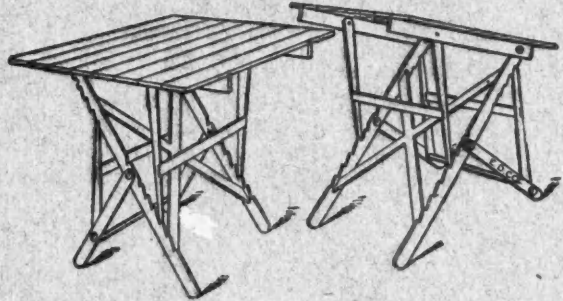
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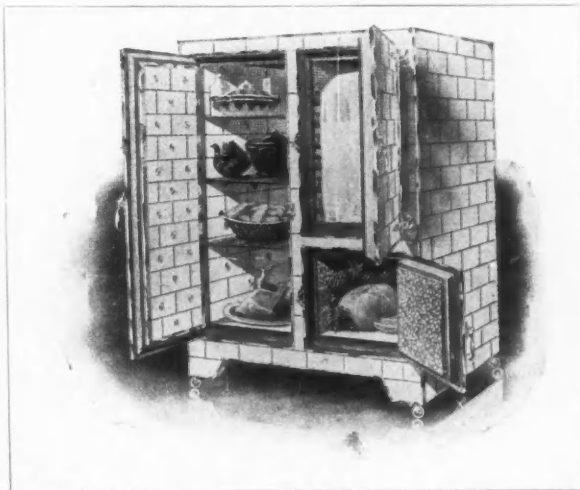
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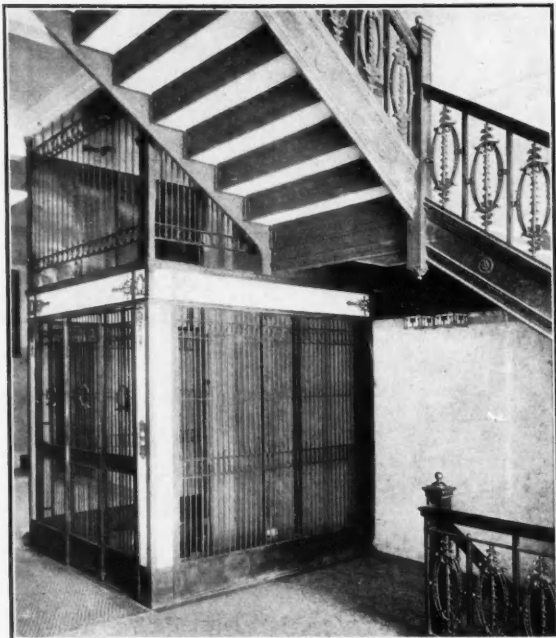
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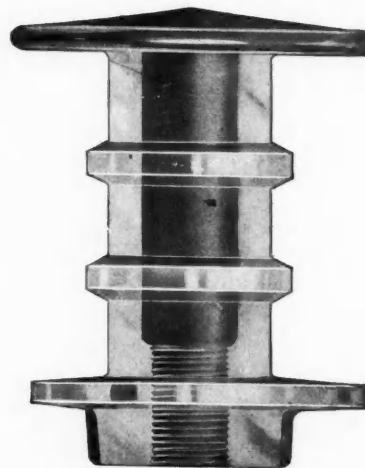
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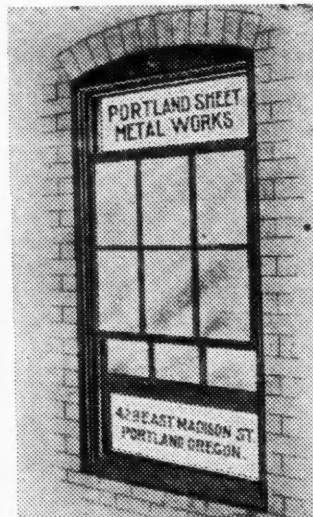
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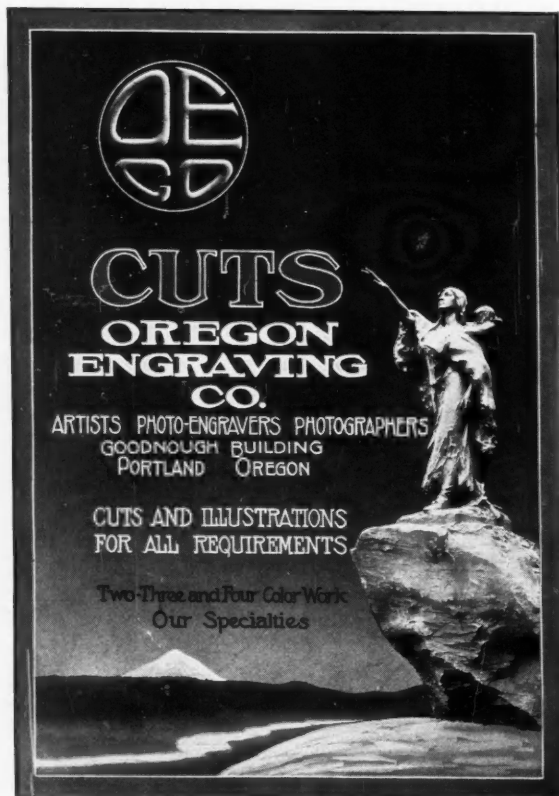
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# The Pacific Coast Architect



VOLUME 1

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NUMBER 2

## COAST PUBLISHING COMPANY, PUBLISHERS

F. O. THOMSON, Editor GEO. L. BLIVEN, M. E., Associate L. J. FLYNN, Advertising Mgr.

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The Editor will be pleased to consider contributions of interest to the readers of this publication. When payment for same is desired this fact should be stated. Self addressed envelopes must accompany all such contributions.

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**NOTICE:** Beginning with the June issue of the Pacific Coast Architect, the subscription price will be advanced to Two Dollars and Fifty Cents per annum. Those who have not already subscribed can save a dollar by getting their subscription in before the June issue.

### Let Us Have A Little Light On The Question

It is to be sincerely hoped that the Stone-Webster Engineering Company will carry to a finish their threatened suit against M. L. Kline. If there is a plumbers' trust, let us have a little light on their methods of doing business. If there is no combination, as alleged by Mr. Brayton, Mr. Kline is entitled to his vindication.

Mr. Kline denies that there is a "trust." Seems to us, we have read the same denial in connection with the suit of the Government against the Standard Manufacturing Company, of Detroit, and other manufacturers of plumbers' supplies. At the same time, we have the spectacle of the attorneys for the defendants attempting to pledge the prosecutors for the Government to a fine providing a plea of "guilty" is entered. This was refused by the judge, who stated, according to reports, that a prison sentence would be a part of the punishment for the infraction of the Sherman law.

Some time ago a suit was filed against the same kind of a combination in Milwaukee, Wis., where a plumber who was not a member of the combination claimed that he could not secure materials. If we remember correctly, there was a scurry on the part of the members of the combination to see who would be first to turn "state's evidence" and thus secure immunity.

It is our personal opinion that there is a "trust," or "combination," and a strong one, at that. A verdict of a jury in the controversy will give us an opportunity to "apologize"—maybe.

### Sociability As A Cure For Abuses

Those of you who were fortunate enough to be present at the annual dinner and meeting of the Portland Architectural Club, a full report of which appears on other pages, could not help but be impressed with the spirit of good fellowship in evidence. Like all professions, the architectural suffers from abuses to which it is heir.

The unwritten code of ethics which ought to govern the architect is too often forgotten or too easily set aside for some special occasion. In this age of keen competition we are too prone to chase the "dollar" and allow the "ethics" to take care of themselves.

You have probably heard the expression that the way to a man's heart and pocketbook was "through his stomach." The sociability which is inseparable from a gathering of this kind will surely bring about a better understanding among the architects.

### Carpenters' Strike at Vancouver, B. C.

At a recent fully attended meeting of the Master Builders' Association reports were received from the different large contractors interested in the association and others in the city, reporting that they had practically all the men they required working at the standard rate of wages which was decided at the commencement of the strike. There was no difficulty in equipping all the buildings in course of construction with as many men as were required, it was reported.

The action taken by the trades union against the employment of non-union men on their Labor Temple building was also discussed, but any action that has been taken against the contractors in no way alters the condition of affairs or affects the stand the Master Builders' Association have taken against the demands of the labor union.

The Master Builders' Association have appointed a deputation to meet other organizations and interests who have not heretofore worked in close harmony with them, to make arrangements for a closer working in the future, so that the city may not be affected by the conditions which have reigned in the past with the unions, and they have also decided that none of their members will figure on any work in the future where strict clauses are included in the contract tying their hands as to who shall be employed.

The Master Builders' Association are quite satisfied with the stand they have taken, and with the condition of affairs at present. They hope for a good building season.

**We Wish To  
Thank Our Well  
Wishers**

We are sincerely grateful for the words of praise showered upon us following the first issue of the PACIFIC COAST ARCHITECT. We made strenuous efforts to answer all the letters, but early fell by the wayside. So we are adopting this method of extending our thanks. We are also thoroughly appreciative of the bits of good advice and the spirit in which they were offered. We shall, from time to time, adopt some of the suggestions, while others seem inadvisable at this early state of our career.

Responding to a request from many of our friends among the engineers, we are establishing an engineering department in this issue, which will be under the able supervision of Mr. George L. Bliven, secretary of the Oregon Society of Engineers. We sincerely trust it will prove of value and interest. We are arranging for a number of articles of more than ordinary merit which we believe will prove instructive.

As already announced, the subscription price of the PACIFIC COAST ARCHITECT will be advanced to two dollars and fifty cents with the June issue. We are taking this

step after due deliberation. The only adverse criticism we have heard has been on account of the cheapness of the publication. We believe it is worth more money, and are therefore making the increase.

Those of you who have not already subscribed can save a dollar by sending in your subscription before June 15th, as no further announcement will be made. Send in your check before you forget it!

**Building Permits  
Fall Off  
For April**

The building permits for the month of April show a decided falling off from the same month last year. Vancouver, Seattle, Spokane and Portland show a material decrease in the value of permits issued.

While the local records show an increase of about 17 per cent in the number of permits issued, the valuation shows a decrease of 9 per cent. The record made by April last year was a remarkable one, which was made possible by a number of large concrete and steel buildings which were started at that time. This year permit for only one large building was taken out.

## Annual Meeting, Portland Architectural Club

(Continued from Page 50)

Other problems were:

Esquisse Rendu:

Pupin Prize, 1; 0 Aerodome.

Paris Prize, 3; 2 Ornamental Stairway Museum.

Archaeological Problem, 4; 0 Tinted Ceiling Italian Renaissance.

Esquisse-Esquisse, 4; 3 No Mention.

In my recommendations to the new officers of the Club for the development of the Atelier, I wish to state that this does not depend wholly upon them, for they need the support of every member. In the first place, to increase the number of students, we need better quarters not only for the light, but to have rooms that will inspire and awaken the feelings in the men. We need a room for a library in connection with our drawing room, also good wall space to exhibit work so the students can see what has been done before them and use former drawings as examples for future work. I think if we can obtain these new quarters there will be an increase in our student body. Lack of suitable quarters, I think, is one reason we have not been able to have more men taking the problems, especially in Class A.

There was one portion of our work laid out for the past year that fell decidedly flat—the short talks about History of Architecture and Ornament. Mr. Logan went to the trouble of making charts, drawings, etc., for a very interesting course, and one that would not only be interesting but a great help to the younger draftsmen. I sincerely hope during this coming year that the class of Architecture and Ornament can get a good hold on the younger men, and I hope the new officers will do all they can to see that that class is started and well attended.

Before closing, I would like to call the new officers' attention to the Free Hand Drawing or Life Class in the Atelier. This is last, but I can not say least. I do not think anyone in architectural work can have too much free hand drawing. Many of our draftsmen are weak in that line, and I would like to see more interest and life put into our free hand drawing this coming year.

The men of the Club are the ones to make it a success. The help the student receives from the older men criticizing the work should be appreciated, and the only way to have it appreciated is for all the students to get together and have the architects encourage their men in the offices to do this work and stay with it—it will help both the architects and the draftsmen.

I wish to thank both Mr. Lawrence, our President, and Mr. Logan, for their assistance during the past year, and I know the men who did the work under them join me in the same.

Yours very truly,

MORRIS H. WHITEHOUSE,

Chairman Scholarship Committee.

The election of officers for the ensuing year resulted in H. Goodwin Beckwith being elected President; Andrae Fouilhoux, Vice-President; W. H. Flanigen, Secretary; and W. P. Dawson, Treasurer.

The officers and chairmen of the committees constitute the Executive Committee.

The Committee on Permanent Quarters announced that an effort would be made to secure permission to erect a bungalow on the roof of one of the large office buildings. It is probable that, at the next meeting of the Club, the committee will recommend the erection of such a building on the roof of the Board of Trade Building.

During the coming year particular attention will be given to the Life and History classes, and the Club will also enjoy a series of travel talks.

President Beckwith announces the following committees:

Class and Educational Committee—Morris Whitehouse, Chairman; Ellis F. Lawrence, Frank Logan and John M. Hatton.

House and Library Committee—A. F. Curtis, Chairman; C. Green and H. P. Bergen.

Entertainment Committee—L. C. Rosenberg, Chairman; W. G. Hathaway, J. Hatton and J. Arnot.

Publicity Committee—L. L. Hall and F. S. Allen.



## Annual Dinner and Meeting of the Portland Architectural Club

The annual meeting and dinner held at the Commercial Club rooms Tuesday, May 2nd, was one of the largest held in the history of that organization, over sixty men sitting down to the dinner. The spirit of good fellowship was extremely noticeable and the meeting was one long to be remembered. The dinner was pleasantly interspersed with selections by the Club Quartette.

Following the dinner President Lawrence called the meeting to order and delivered his summary of the year's work as follows:

### ANNUAL REPORT OF THE PRESIDENT.

For five years the Portland Architectural Club has been striving to cement together, in bonds of good fellowship, common understanding and common sense, the architectural profession of this city.

Permit me, tonight, to briefly review some of its achievements and to point out to you why it has long since demonstrated its usefulness and why it should enter into its new year with courage and confidence.

After inaugurating the annual exhibits and publishing its first year book, the Club realized the possibilities in a reunion of the architectural clubs of the Pacific Coast, in establishing a series of exhibitions which would make possible the financing of exhibits including numbers of the best Eastern works, and also a uniform scholarship work with suitable accompanying prizes. With this in mind the Club called for a convention of architects and sent its representatives North and South to explain the purpose of such a convention. Mr. Linde met the Seattle men and the speaker enjoyed a trip to Los Angeles and San Francisco. The result, as you know, was the formation of the Architectural League of the Pacific Coast, in Portland nearly three years ago, with Willis Polk the first President. Emanating from this was held, last year, under the able management of M. A. Vinson, a series of five exhibits—Denver, San Francisco, Los Angeles, Seattle and Portland. Few Eastern exhibits ever equalled these exhibits in quantity and in quality. The four year books published in connection with these exhibits furnish a valuable brochure of recent works in the Pacific West.

The scholarship work, systematized under the direction of the League committee, has continued under the Beaux Arts society as carried on by the Portland Architects' Club before the formation of the League. An attempt is now being made to raise a permanent Scholarship Fund, and \$1,000 is assured this year as a Traveling Fellowship to be awarded the man winning first mention in a given project. Our Club has subscribed \$200 to this prize and a committee appointed by President Rosenheim consists of Ion Lewis, Joseph Jacobberger and the speaker will have charge of raising our share of a permanent fund for this purpose.

When the Charter Revision Commission was at work framing a new Charter for the city, the Club saw an opportunity to establish an "Art and Building Commission." Acting accordingly, a committee was appointed and appeared before the Charter Commission, which adopted the suggestions offered. This was an attempt to legalize a commission whose duty it should be to protect the Art Standards of the city, and to promulgate plans for the "City Beautiful." Unfortunately, the new Charter was lost, and with it the Art and Building Commission. The Club, however, secured a survey of the city, and sending copies to its members, invited ideas as to a city plan with the intention of drawing from all and formulating a Club plan as it were.

In the meantime the new postoffice was announced, and Senator Bourne was appealed to to delay definite location of this important building until the civic center had been selected and studied.

The idea apparently appealed to Senator Bourne, who got in touch with D. H. Burnham about the matter and called a meeting of twenty of his friends, and started a fund of \$2000 with which to employ E. H. Bennett—Mr. Burnham associated. This movement, thanks to the councils of certain members of the club, grew into the Civic League, on the Executive Committee of which the speaker has the privilege of being your representative.

Although we might wish a little more foresight had been used in preparing for this vital matter—legalizing a City Plans Commission, as Seattle has done—no better man than Mr. Bennett could have been selected, and the outlook for the fulfillment of a portion of his plan at least in the next decade is promising.

The architects must put their shoulders to the wheel if the Bennett plan is to be properly explained to the people. We must emulate the example of our Seattle brothers who are now giving a series of lectures on the subject in their city. They have written asking that our men come there to aid the general cause, and we can surely make use of their enthusiasm and eloquence in our own campaign to come.

During the past five years an important part of the Club work has been the lectures given on travel, history, and technical subjects. The building code has been constantly before us and although our committee's ideas were not always followed in such matters, the weight of our position was recently exemplified when the Council Committee on Police and Health postponed action on the new plumbing code until we had carefully criticised the new law.

The Club was instrumental in forming the new Builders' Exchange, calling the first meeting after asking the several Masters' Associations to select representatives. The speaker was waited upon yesterday, as a result of this, by deputation of the Employers' Association, which fears union control. Our position in the matter, formulated at a meeting attended by Messrs. Doyle, Jacobberger, Schacht, Beckwith, Wilson, Root, Logan and Lawrence, is a safe one—our endorsement being couched in the term, "if properly conducted." It is unfortunate that one of the firms there represented has gone on record to the Employers' Association as condemning the Exchange, and declaring that no reputable architect will support it. Notwithstanding, the Exchange, "if properly conducted," will facilitate business to a marked degree and will develop a higher standard of building.

During the past year, at the request of the City Council, the Club, through its committee of Messrs. Jacobberger, Fouilhoux, Wilson and Lawrence, made an investigation of the cost of school houses throughout this county. A minimum was recommended of twenty cents a cubic foot for high schools and sixteen cents a cubic foot for grammar schools, or \$150.00 per pupil.

A study was made also, at the request of the Council, of the methods used in appointing architects for public schools, and a recommendation was made that the Boston procedure be adopted. They have a special commission in whose hands rests only the construction work. Their duty is to standardize requirements, to maintain a drafting force for small work, and to select a competent architect for the larger work.

To stimulate interest in the Club during last year's exhibition, an original comedy, written by Mr. Dawson, was successfully produced by members of the Atelier. A more ambitious attempt is promised for the near future. We have enjoyed baseball games, bowling matches, Christmas festivities, and the House Committee has performed splendid work on the spreads for the monthly meetings.

The membership of the Club has increased in five years from twenty to about eighty, and tonight we have the pleasure of announcing the following new members, acted upon at our last Executive Committee meeting: Ion Lewis, C. L. Horn, W. Mills and Thomas Hawkes.

Bills were drafted and submitted to the last Legislature calling for the licensing of architects and making compulsory the selection of architects by competition for all State work amounting to over \$5,000. These bills were lost for lack of lobbying.

For a time there has been a growing sentiment among the members of the Club that its work should be confined to social and educational work. As the Oregon Chapter of the American Institute of Architects is assured, and as it should be the proper body to act upon public and professional questions, a special committee was appointed to draft a new Constitution for the Club. This committee consisted of Messrs. Beckwith, Logan and Hatton. The new Constitution was read and approved at the last monthly meeting, and is now ready for your final vote tonight.

To insure the success of the educational work, and to overcome our present great handicap in our lack of quarters, a subscription list has been passed around among the members and about \$800.00 has already been subscribed with more in sight. This should guarantee at least one year's rent and will go a great way towards furnishing the new quarters. The list is printed below:

Several suggestions have been made concerning quarters and it is probable that the Club will build its own on the roof of some building, or secure a small house on the outskirts of the business section of the city. The Engineers' Club has suggested that we go in with them in securing Club rooms, and this should be considered, for it would make possible a more attractive library. Gifts are already coming in and it should not be difficult to obtain attractive furnishings from our patrons. John Calvin Stevens, of Portland, Maine, has kindly donated one of his paintings to the cause, and we hope our local men will fall in line with gifts of books and furniture.

In closing, permit me to thank you for your continued support in my poor efforts on behalf of the Club, and let me say I have been amply repaid for my time and effort in the strong friendship I have made with the active men of the Club.

ELLIS F. LAWRENCE,  
President.

Following the reports of the Secretary and Treasurer, and their acceptance, Mr. Whitehouse, chairman of the Committee on Scholarships, reported as follows:

#### REPORT OF THE SCHOLARSHIP COMMITTEE.

Mr. President and Fellow Members of the Portland Architectural Club:

The student work of the Beaux Arts Society, under guidance of the Portland Architectural Club, has had a very successful year, as far as the work has been concerned, but has not been so successful in the number of students studying.

At the beginning of the year, when the first programs were received, the class numbered 16 men, but as different problems were in order and finished, the class

gradually decreased until there were six men left. These men who were left have worked hard and earnestly, and one can easily see the great improvement that has been shown in their work, not only in draftsmanship, but in their manner of studying both the esquisse and the development of plan, elevation and detail in the future study of the problems to larger scale.

The work has been divided into different groups, namely: Class A, Class B and order problems, as well as the Archaeological and different prize drawings. In the Class A our atelier has not had men entered. The reason for this is not on account of our having men eligible, for I know of plenty who are in different offices in the city that are very able to do the work. The question arises, why do not the men go into this sort of work? This question, I think, I can answer and will try to do so later on in my recommendations to the new officers who are to be elected tonight for the ensuing year.

In the Class B work of the Society, I think we have done well as this is really our first year that we have had men take an interest in it.

The problems have been very interesting as a whole, and the men, with few exceptions, have sent to the Jury creditable work.

The following problems were done this year:

A Garage for a country estate:

- 1 man entered and took the esquisse.
- 1 man completed the projet rendu.
- 1 man received mention.

A Museum, the second problem:

- 2 men entered and took the esquisse.
- 1 man completed the projet rendu.
- 0 man received mention.

A Winter Circus, the third problem:

- 4 men entered and took the esquisse.
- 2 men completed the projet rendu.
- 0 men received mention.

A Town Hall, the fourth problem:

- 5 men entered and took the esquisse.
- 2 men completed the projet rendu.
- 1 received mention.

Tomb for a National Hero:

- 1 man entered and took the esquisse.

This being the last problem received, I cannot say anything further in regard to it, as the men have some weeks yet to work on it.

The Order Problems were as follows:

Entrance Gateway through Building to Courtyard:

- 9 men entered and took esquisse.
- 5 men completed rendu.
- 4 men received mention.

Portal to Fortress:

- 8 men entered and took esquisse.
- 4 men completed rendu.
- 2 men received mention.

Treatment of portion of Terrace Wall:

- 5 men entered and took esquisse.
- 4 men completed the projet rendu.
- 1 man received mention.

Peristyle with Porch and Portico to a Court House.

- 5 men entered and took the esquisse.
- 2 men completed the projet rendu.
- 1 man received mention.

A Pavilion at the Angle of a Court of Honor:

- 2 men entered and took esquisse.
- 7 men completed rendu.

The last problem and drawings are not to be finished for some weeks.

(Continued on Page 48)





Glyn Building, Vancouver, British Columbia  
Gould & Champney, Architects, Seattle, Wash.

PACIFIC COAST ARCHITECT  
MAY, 1911

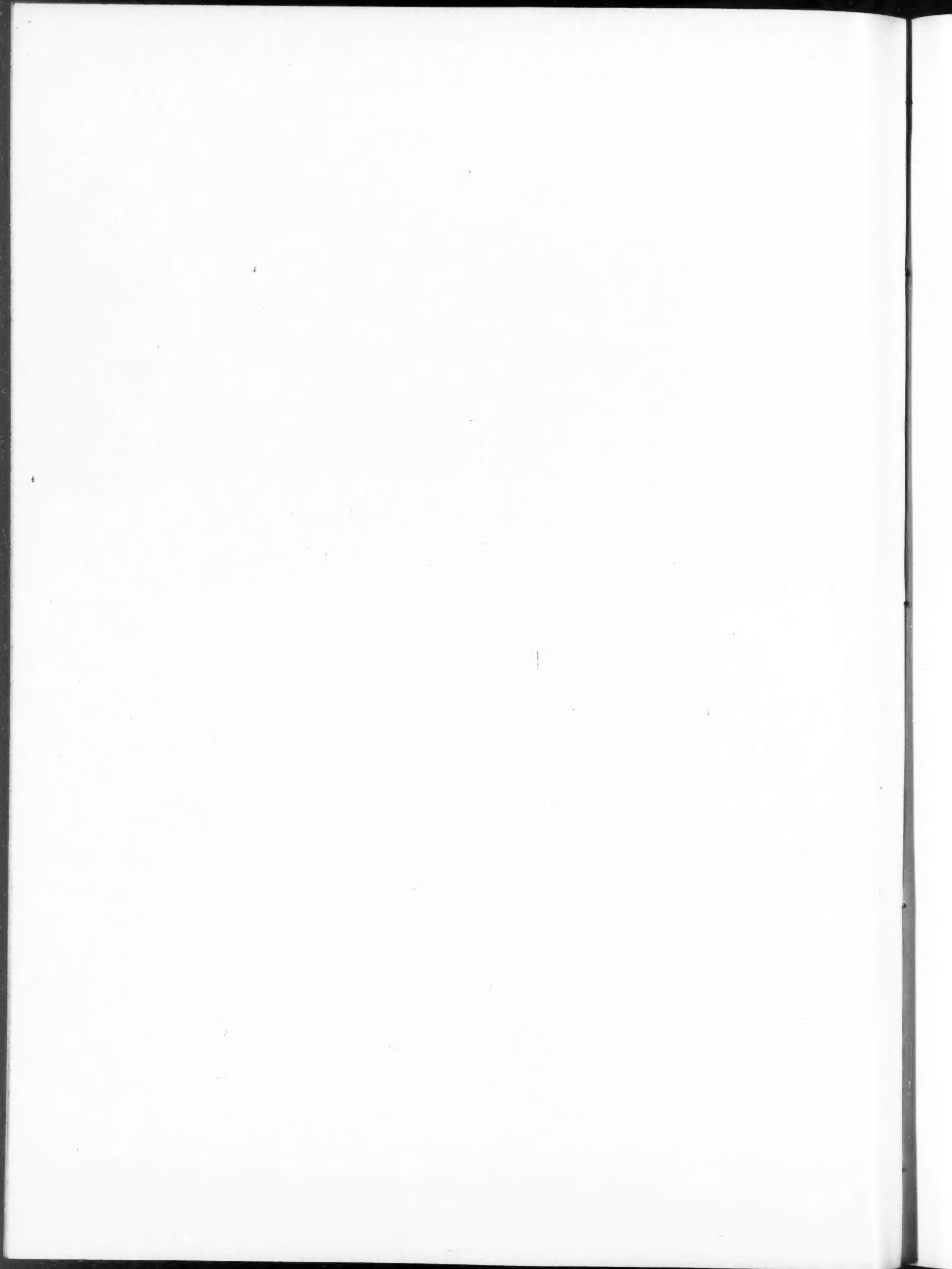






Elevation, Residence for Mr. Fred Phair  
Clarence Z. Hubbell, Architect, Spokane, Wash.

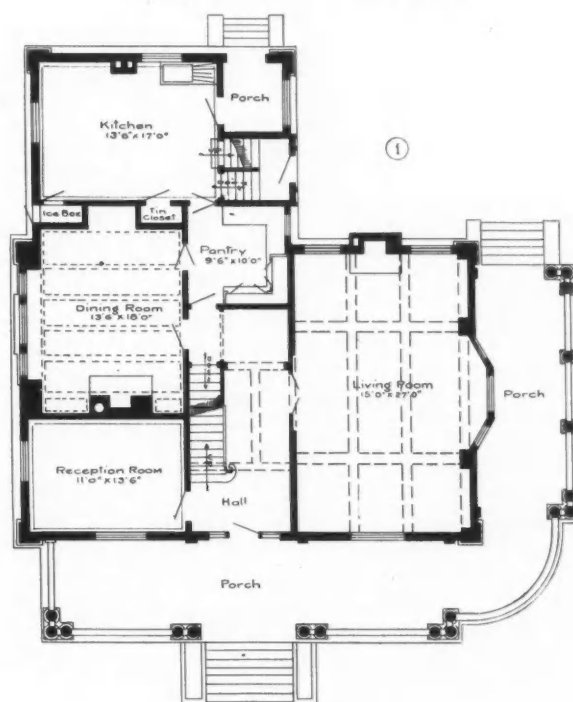
PACIFIC COAST ARCHITECT  
MAY, 1911





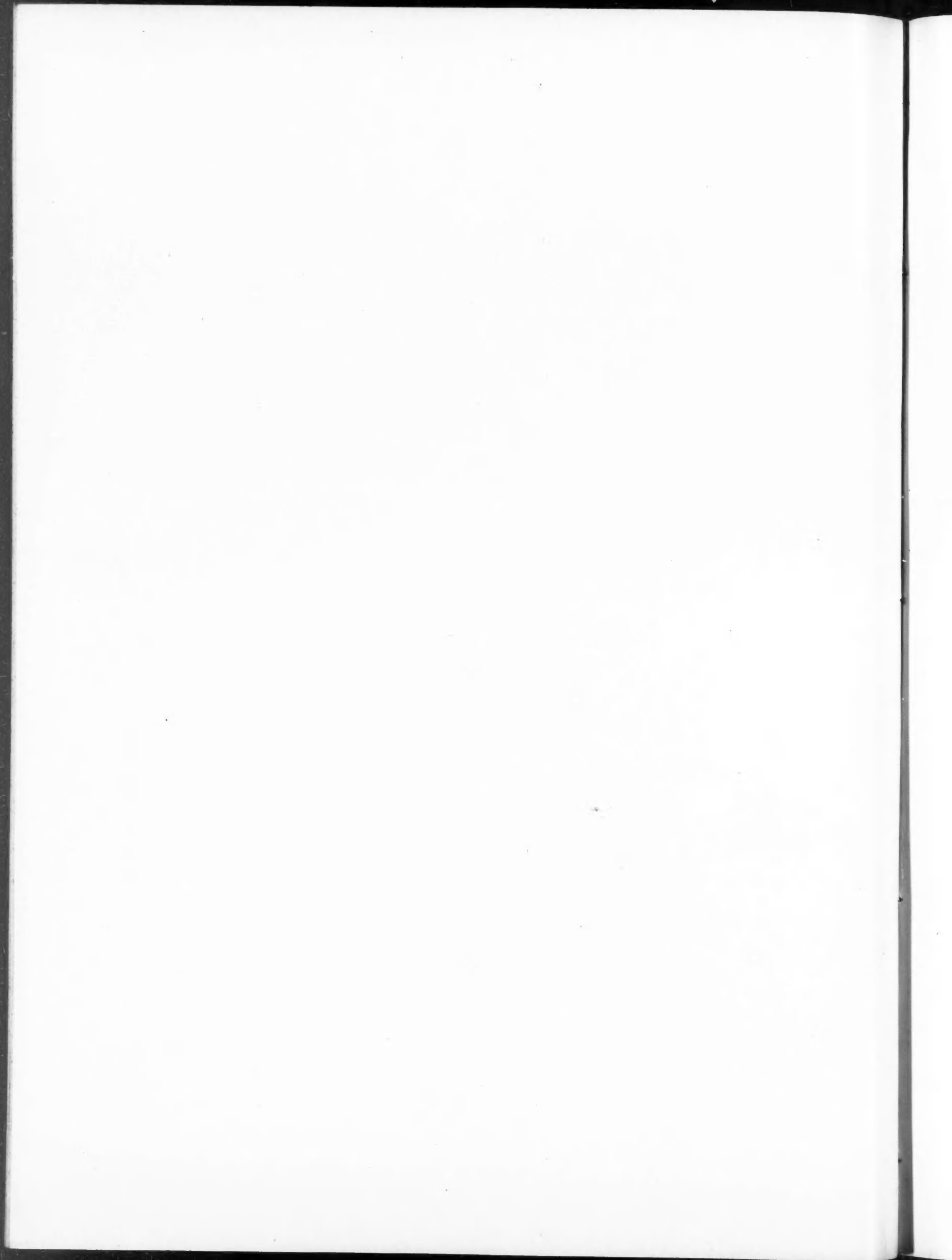


Living Room, Residence for Mr. Fred Phair  
Clarence Z. Hubbell, Architect, Spokane, Wash.

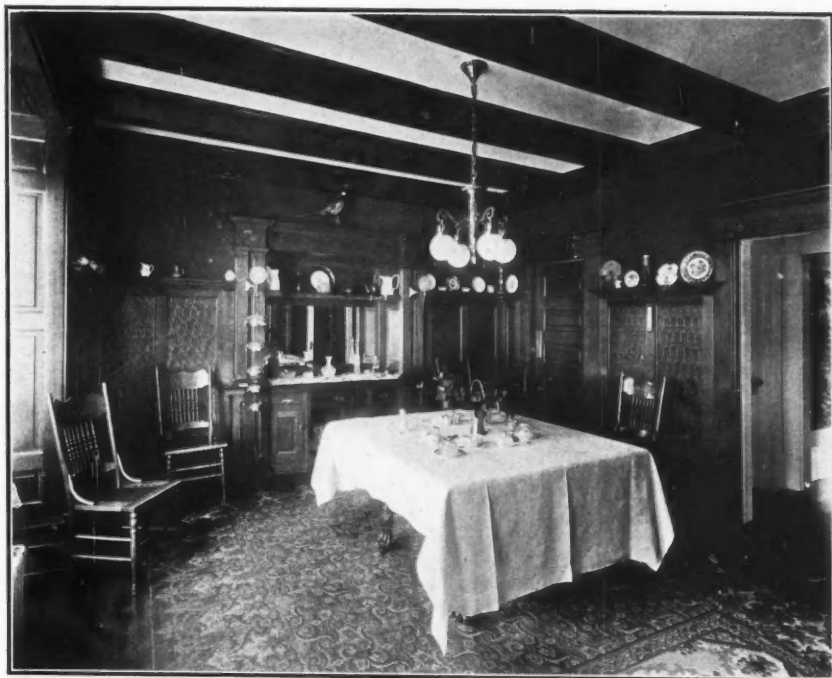


→ FIRST FLOOR PLAN ←

First Floor Plan, Residence for Mr. Fred Phair  
Clarence Z. Hubbell, Architect, Spokane, Wash.







Dining Room, Residence for Mr. Fred Phair  
 Clarence Z. Hubbell, Architect, Spokane, Wash.



→ SECOND FLOOR PLAN ←

Second Floor Plan, Residence for Mr. Fred Phair  
 Clarence Z. Hubbell, Architect, Spokane, Wash.



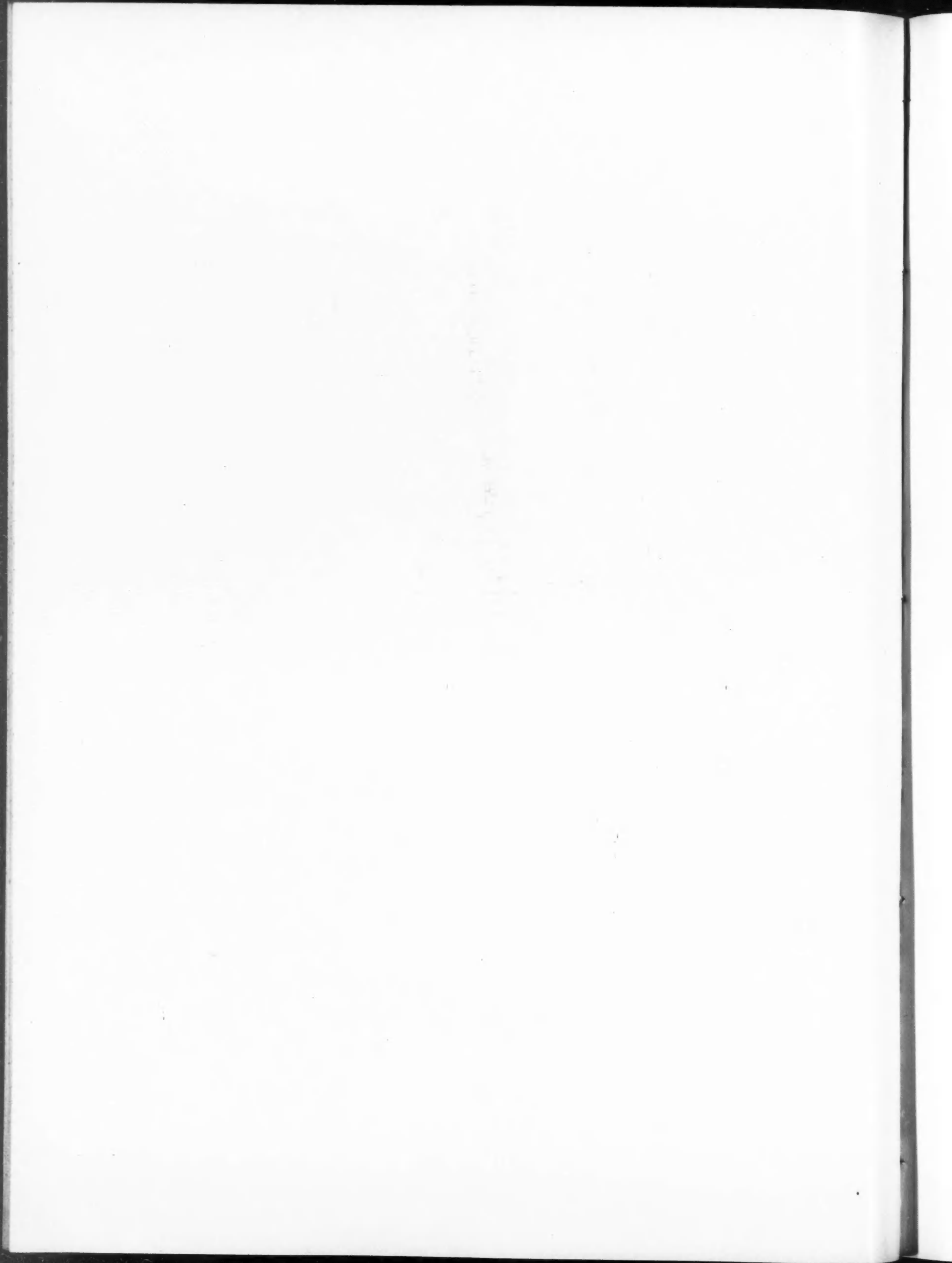


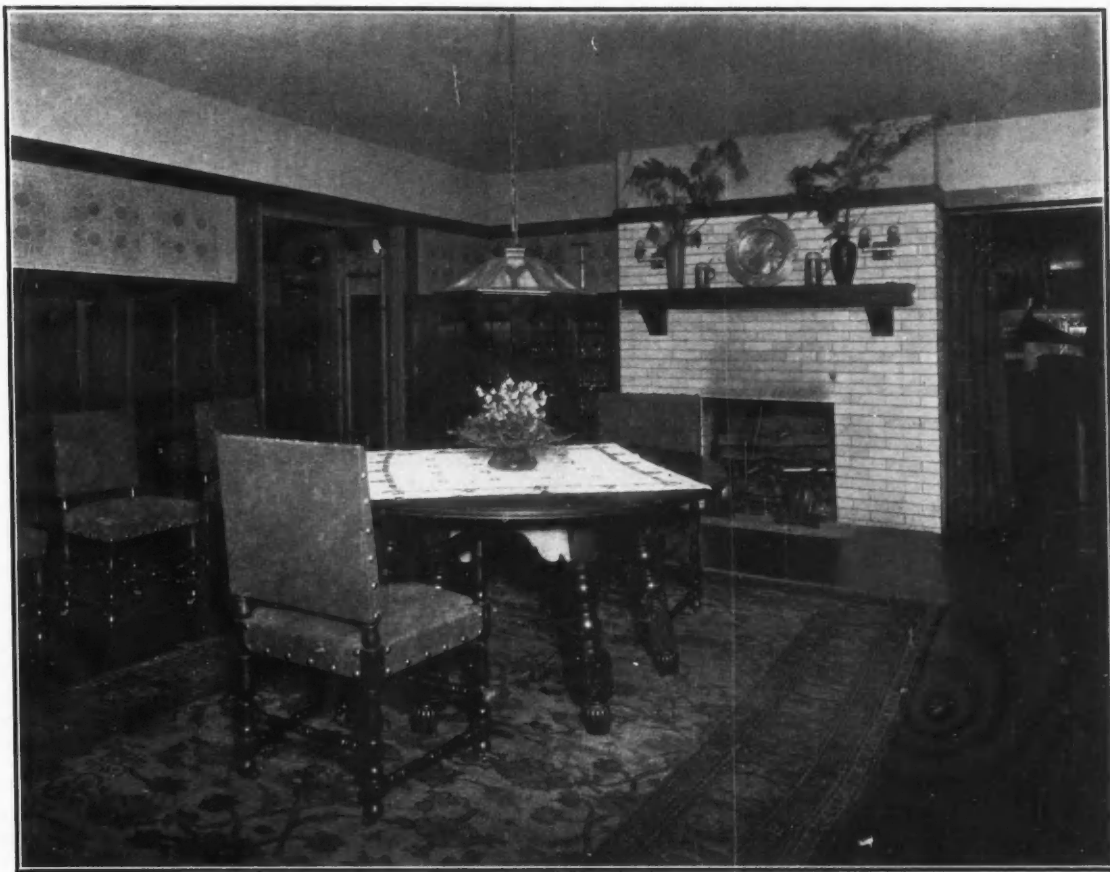
Front Elevation, Country Residence for Mr. C. H. Clarke  
Willatzen & Byrne, Architects, Seattle, Wash.



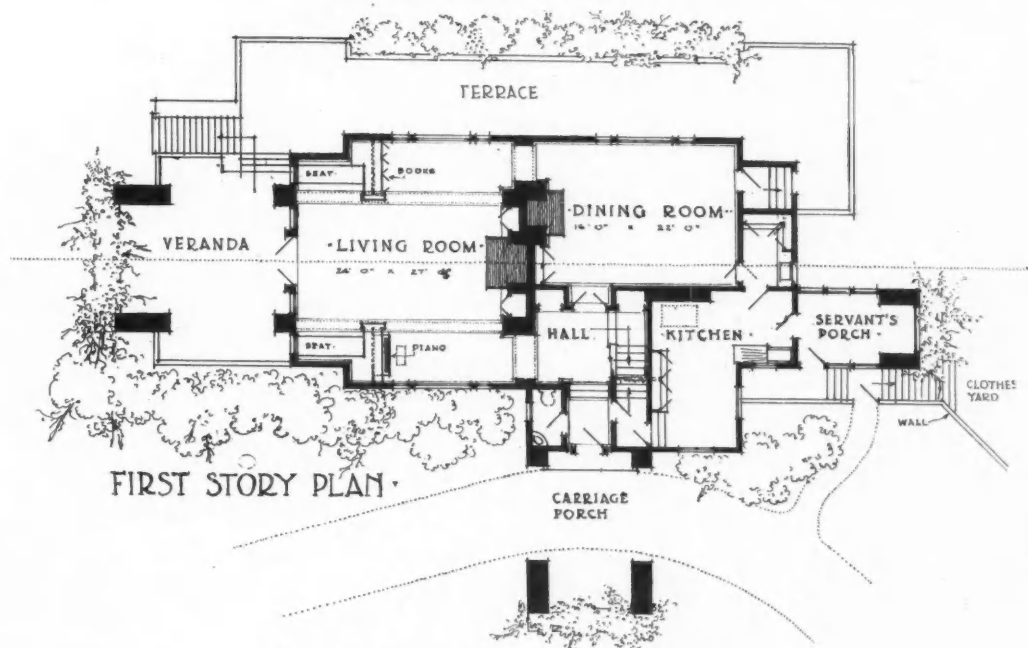
Side Elevation, Country Residence for Mr. C. H. Clarke  
Willatzen & Byrne, Architects, Seattle, Wash.





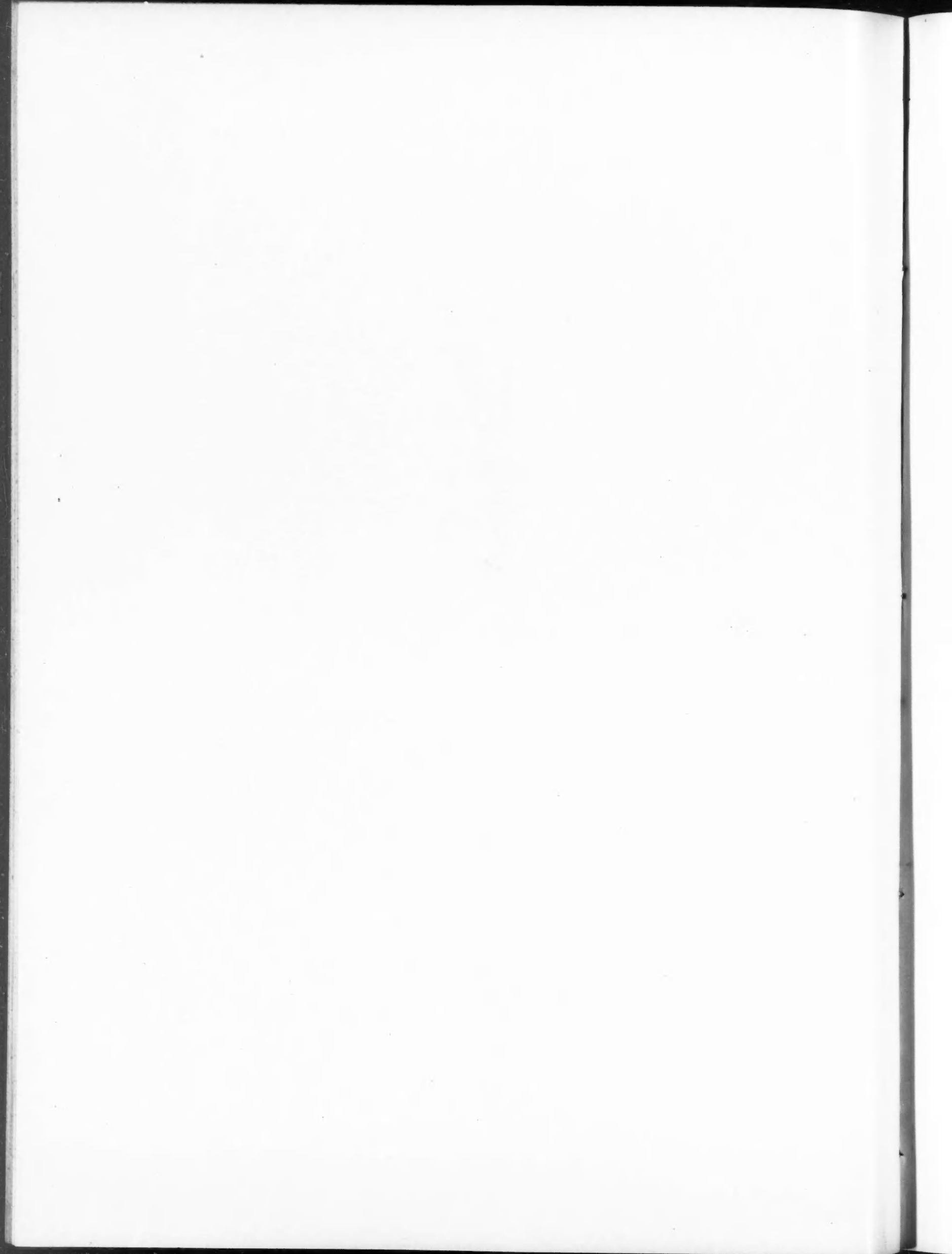


Dining Room, Country Residence for Mr. C. H. Clarke  
Willatzen & Byrne, Architects, Seattle, Wash.



First Floor Plan, Country Residence for Mr. C. H. Clarke  
Willatzen & Byrne, Architects, Seattle, Wash.

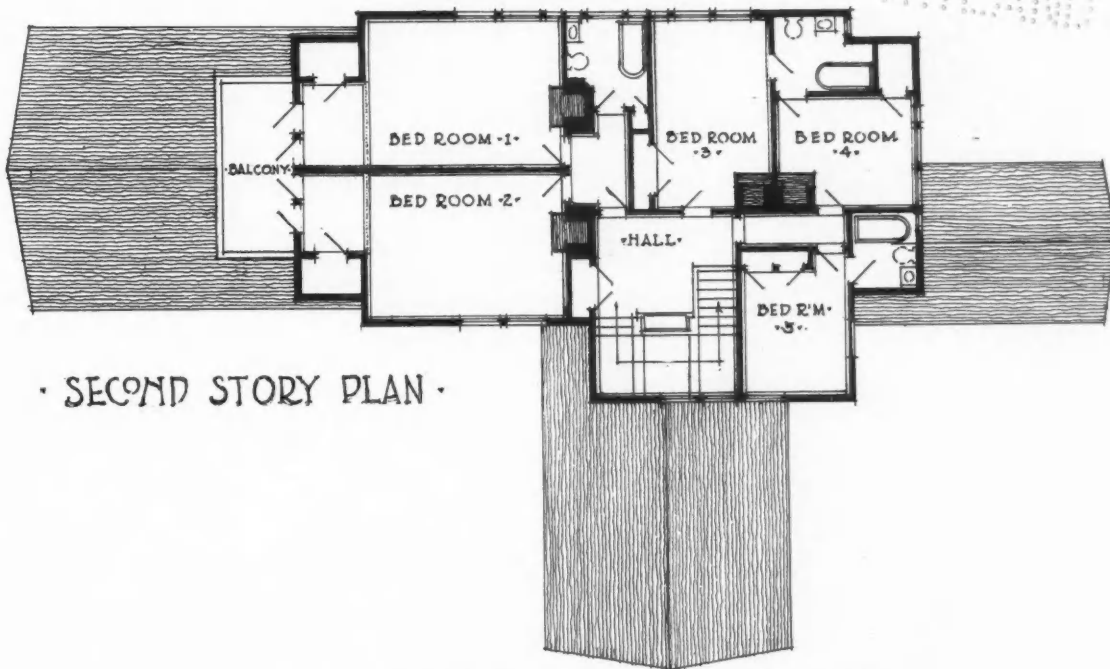
PACIFIC COAST ARCHITECT  
MAY, 1911







Living Room, Country Residence for Mr. C. H. Clarke  
Willatzen & Byrne, Architects, Seattle, Wash.



• SECOND STORY PLAN •

Second Floor Plan, Country Residence for Mr. C. H. Clarke  
Willatzen & Byrne, Architects, Seattle, Wash.

WILSON'S WARE  
TO  
PORTLAND OR  
90 00A 17004



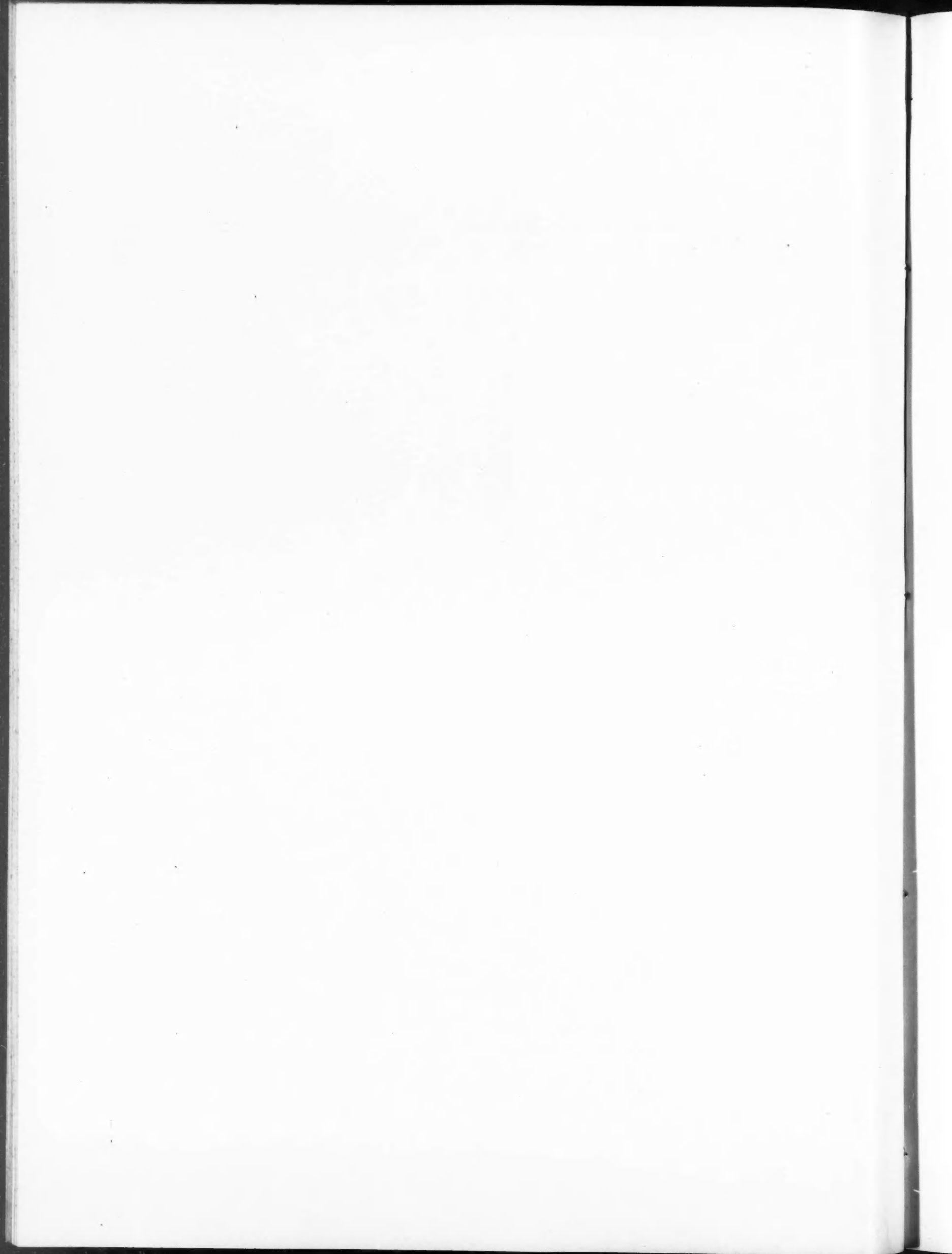
Front Elevation, Residence for Mr. Clayton D. Wilson  
Wilson & Loveless, Architects, Seattle, Wash.

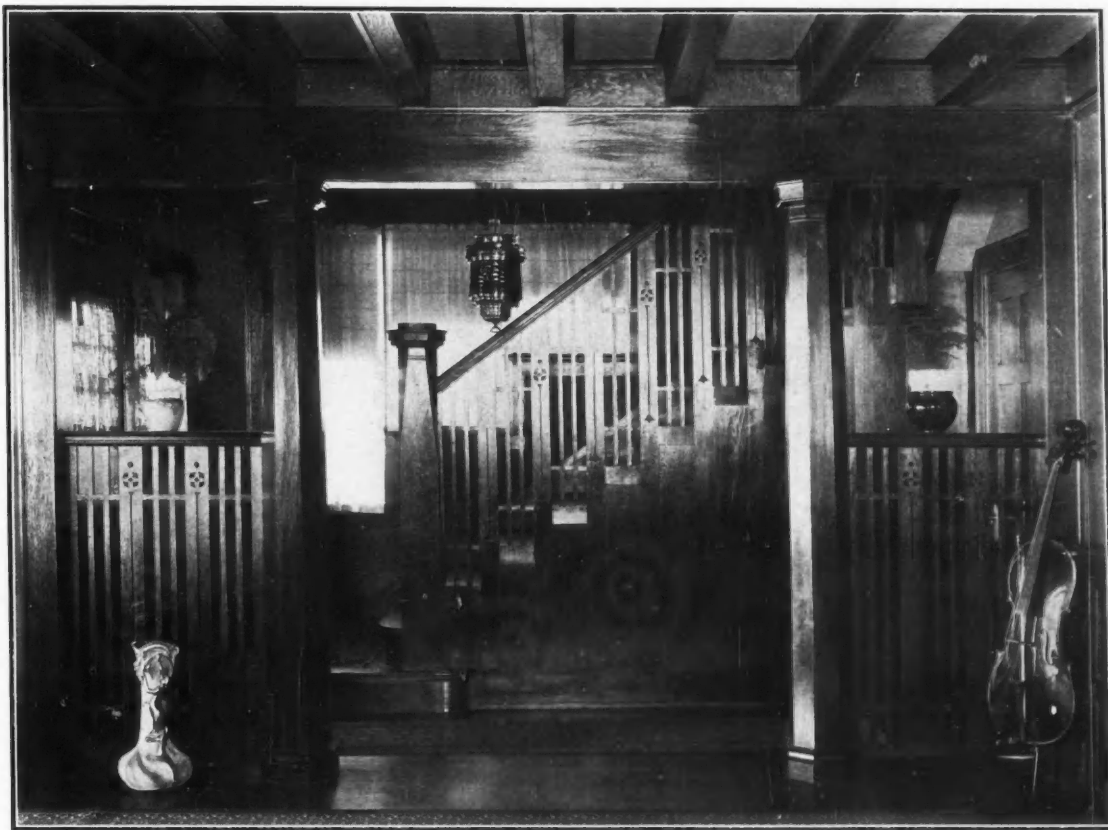


Rear Elevation, Residence for Mr. Clayton D. Wilson  
Wilson & Loveless, Architects, Seattle, Wash.

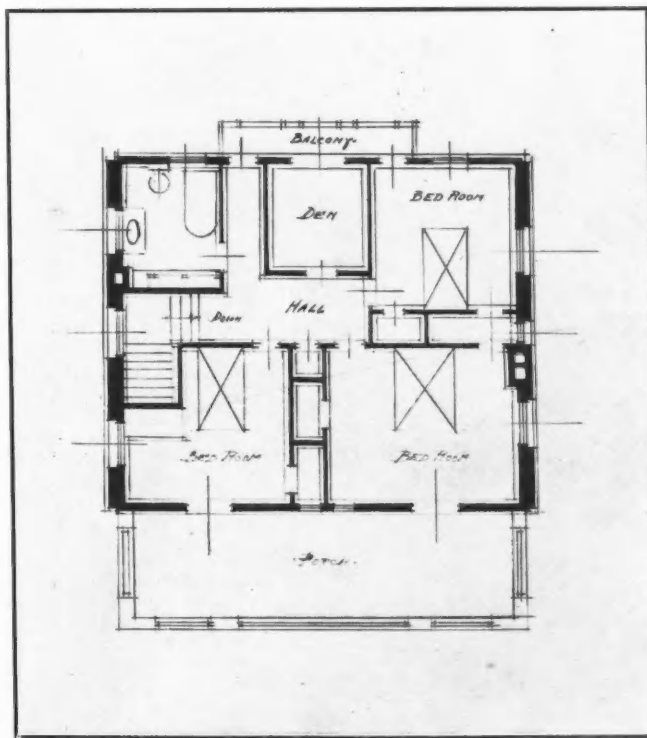
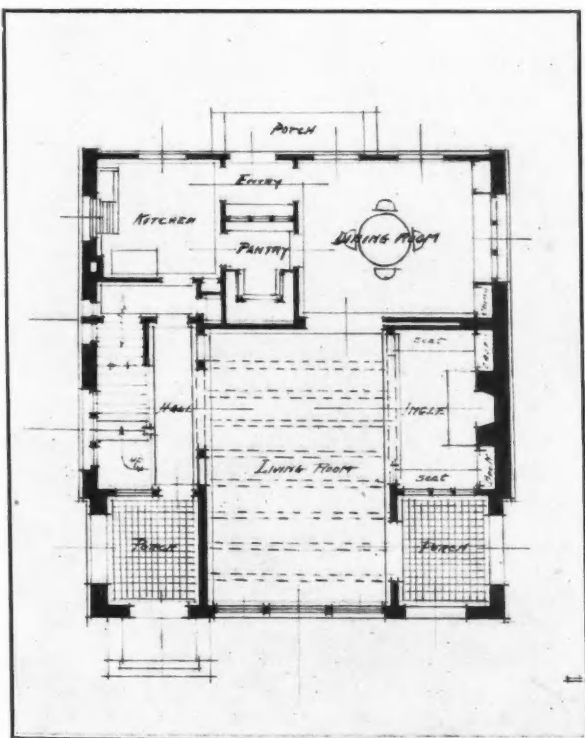
PACIFIC COAST ARCHITECT  
MAY, 1911







Hall, Residence for Mr. Clayton D. Wilson  
Wilson & Loveless, Architects, Seattle, Wash.



First and Second Floor Plans, Residence for Mr. Clayton D. Wilson  
Wilson & Loveless, Architects, Seattle, Wash.

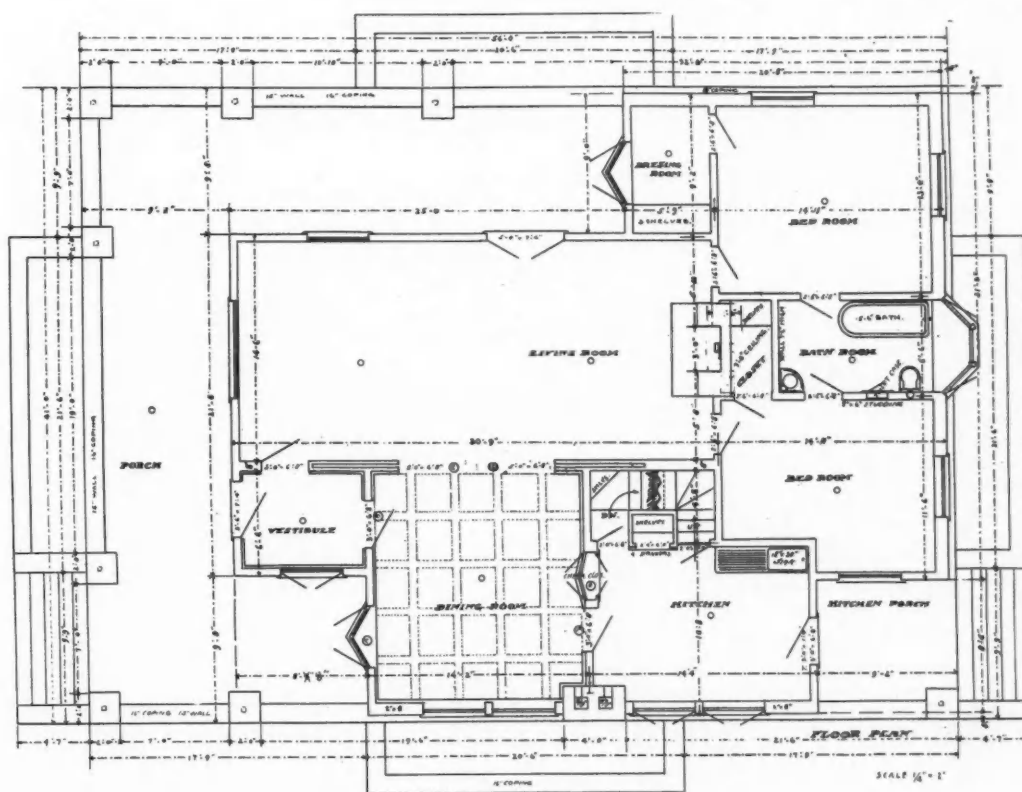
PACIFIC COAST ARCHITECT  
MAY, 1911







Front Elevation, Bungalow for Mr. George W. Fox  
Hyslop & Wescott, Architects, Spokane, Wash.



Floor Plan, Bungalow for Mr. George W. Fox  
Hyslop & Wescott, Architects, Spokane, Wash.

PACIFIC COAST ARCHITECT  
MAY, 1911



## OUR ILLUSTRATIONS

**The Glyn Building, Vancouver, B. C.**

The Glyn Building is to be a ten-story reinforced concrete office building, to be built on the corner of Granville and Pender and adjoining the Canadian Bank of Commerce, Vancouver, B. C., for Jonathan Rodgers. The ground floor will contain stores with entrances to the offices above from each street with four passenger elevators.

The building will be thoroughly modern throughout. The exterior will be of pink Tennessee marble and ivory or cream white terra cotta face, for the rest of the structure, matt or semi-clay. The cost will be about half a million. Mr. Rodgers and Architect Gould are now abroad. Gould & Company, of Seattle, are the architects.

**Residence of Mr. Fred Phair, Spokane**

The residence of Mr. Fred Phair, Spokane, is particularly well built as well as attractive in appearance. The interior basement walls are brick. Exterior basement is vitrified brick. The basement floor is cement, with the exception of the billiard room and hall, which are maple. The first story floors are oak. The exterior walls are studded, then sheathed with shiplap, then covered with Cabot's quilt, then finished with 1 in. by 2 in. strips, sheathed again with shiplap which is covered with heavy waterproof paper and cedar clapboards.

Heating plant is Broomil vapor system. The servants' bathroom is located on the third floor. Clarence Z. Hubbell, Spokane, is the architect.

**Residence of Mr. C. D. Wilson, West Seattle**

The house stands near the edge of a bluff from which there is an extended view of Puget Sound and the Olympic range of mountains. For this reason the end of the living room is given a large area of window surface. The porch at the side of living room is screened for summer use and is used as a conservatory in the winter. French windows open into it from the living room. The arrangement of stair hall, ingle nook and living room give an unusually spacious effect to the interior. The coat closet is located off the passage between hall and kitchen. The rear entry has space for a refrigerator. Under one of the seats in ingle nook is a dumb waiter for hoisting wood and coal direct from cellar, a convenience that most housekeepers will appreciate. The second floor has three bed rooms and a den, and a balcony opening from the hall, which serves as a place to air bedding. Across the entire front of second story is an open porch from which a magnificent view is obtainable. French windows open on this porch from the two front bed rooms.

The exterior of the house has two brick gables, built of paving brick, which varies in color from chocolate to light red, laid with a wide joint. The sides are of Stucco on wire lath of a warm gray, while the timber work is brown. The shingled roof is a soft green. The entrance front is given a symmetrical treatment and is more severe than the garden front, which is treated in a rather playful manner.

The interior woodwork is all Washington fir, stained. The panelling of the hallway extends up the side of the stairs, the stiles of the panels being perforated. Wilson & Loveless, Seattle, are the architects.

**Circle A, Portland's New Club**

The launching of Circle A adds another organization to Portland's Clubdom. The purpose of the Club is to reach certain classes of professional men through the field of fine or applied arts. Circle A Club is primarily an organization of designers. Only two months old, the organization covers the artistic field very thoroughly. This field includes commercial designers, engravers, etchers, jewelry, chandelier, art glass and furniture designers, newspaper illustrators, magazine artists, professional painters, some of more than local reputation, interior decorators, several sculptors and architects.

Following its organization the Club established quarters at 406 Labbe Building, and proceeded to make them inhabitable through the generosity of several of the material supply firms, and the personal work of the members. Timms, Cress & Co. furnished the kalsomine; "Duresco" donated by Fisher, Thorsen & Co. for the walls; "Neponset" given by F. T. Crowe & Co. for the floor, made the quarters begin to assume a homelike air. Chandeliers donated by Swetland & Son were re-arranged to J. C. English & Co.

The Club made its initial bow with an exhibition of water colors by Mr. A. Disi, of Rome, which was held in the Club rooms a fortnight ago, and was commented upon as being one of the finest displays of its kind ever seen in Portland. At the present time there is an exhibition in the Club quarters of the oils and water colors of Mr. C. C. McKim, of New England. Mr. McKim is a younger painter of the American Impressionistic School. This style of painting is the one which awoke Europe to the realization that America has a vigorous and a National art. An exhibition of commercial art will be opened on the 19th of May, and will consist of the best work which Portland's commercial artists are doing. Immediately following will be an exhibition on the "House Beautiful." It will open the first week of the Rose Festival and continue for two weeks. All people connected in this line of endeavor are cordially invited to participate in the exhibition. Information concerning the exhibition can be had from Val Deveroux, 416 Couch Building.

The Club is conducting a splendid life class twice a month, where some promising work is being accomplished. It is also conducting a Sunday out-door sketch class. The officers of the Club are: Val Deveroux, President; Lute Pease, 1st Vice-President; H. F. Wentz, 2nd Vice-President; Geo. O'Brien, Secretary; W. H. Blevens, Asst. Secretary; J. Juopo, Treasurer; C. J. Fulton, Fred Rutledge, Chr. Pafil, L. C. Miles and R. W. Carey, Executive Committee.

**Programs for State Capitol Competition**

At a recent meeting of the Capitol Commission of Washington, and Advisory Architect C. H. Bebb, the program for the competition for a proposed architectural plan for the capitol group of buildings and the new "Temple of Justice," to be the first of the group, was formally adopted following for a few minor changes.

The call for plans will be made and the program for the competition will be forwarded upon application. The time for the closing of the competition has been extended from July first to the twenty-seventh, the Judges to proceed with the examination on the following day.

The prizes and awards will be made according to the rules of the American Institute of Architects. The first award will be made for the design and supervision of the Temple of Justice. The other awards are: Second, \$1000; third, \$750; fourth, \$600, and fifth, \$500.

### Decorative Fabrics

BY JENNIE M. MORTON.

All through the centuries decoration has followed architecture, and the subject of furnishing and decoration, though of real interest to the architect, is too often left entirely to the client, who, being at a loss how to proceed, sometimes loses time and results by taking indiscriminate advice.

The necessity thus created has been taken advantage of by the big decorative departments, who now engage experienced decorators and salesmen, qualified in every way to carry out in every detail any scheme of decoration best suited to the architectural conditions, whether in the elaborate period styles, or the more modern and simple treatments.

Of no small importance is the initial question of selection, which the purchasing department has been careful to put into the hands of men who understand and appreciate the artistic as well as the commercial value of the market.

Both interesting and educational are the new things to be found in artistic fabrics for wall coverings, draperies and upholstery. So faithfully have the old designs been copied, and so masterly the technique, that one can now enjoy the luxuriant richness of the Italian Renaissance or the delicately elaborate designs of the French, not only in expensive materials, but also in the cheaper fabrics, which are within the reach of almost everyone.

Many of the tapestries are reproductions from the historical royal manufactories of the Gobelins, Beauvais and Aubusson.

A number of gorgeous examples of Broderies, Venetian and Florentine are shown. These have brilliant touches of color, interwoven with thread of gold on neutral ground of silk. Other combinations of jute and silk, delightful for wall coverings, come in two-toned fabrics, reproductions of beautiful old designs, at an extremely low price. Of these some of the finest are in Venetian Broderies, but it is the novel technique more than the color and design that gives the wonderfully rich result.

Many designs are to be had in silk brocade of Louis IV., V. and VI., for wall hangings and upholstery. There are also some rare examples of Toile de Jouy in design and color very like the old.

Beautiful combinations are presented for wall and draperies, and it is now not so much a matter of expense as of careful planning to secure an harmonious and consistent whole.

### Portland Stands Fifth in National Building Record

Figures giving building construction throughout the country for the first quarter of 1911 place Portland in fifth place with a total of nearly \$5,000,000. Leading, in the order named, is New York, Chicago, Philadelphia, Los Angeles and Portland.

It is almost unbelievable to the average Easterner and a source of great pride to Portlanders that for a year past this city has beaten such centers of population as St. Louis, Baltimore, Boston, Washington, Cincinnati, Cleveland and New Orleans. The record shows that during every month of 1910, Portland's building activity exceeded all of those cities. In January and February of this year Portland continued to maintain its lead over these cities in the half million class, but by some strange spurt both Boston and Chicago jumped ahead of Port-

land in March, forcing it down to seventh place. San Francisco also exceeded Portland by \$2000 in March, but for the year, so far, Portland is ahead of the California metropolis by more than a million dollars.

That the four large Coast cities, San Francisco, Los Angeles, Portland and Seattle, should regularly, month after month, eclipse Eastern and Middle Western cities, is an index to the fine sample of prosperity and the general upward movement and progress of the three Coast States.

The progress of the entire Pacific Coast is a source of pride to every individual on this side of the Continent, and it is extremely regrettable that such evidences of jealousy are allowed to exist as now and then crop out in Los Angeles and Seattle newspapers.

Speaking of these little jealousies, "Facts and Comment," in the *Los Angeles Times*, had the following to say in a late issue of that paper: "The proper attitude of the West Coast man toward the West Coast was admirably expressed last week by the manager of two of the great hotels of the Northwest, who, in discussing the knocking that is sometimes to be seen in the relationship of different cities, spoke as follows:

"The hotel men of the Pacific Coast are setting a good example to the many other business and professional men. Instead of knocking each other, the bonifaces are quietly spreading the good word about the great and growing cities of the whole Coast, their attractions and their inducements to tourists and colonists. In this way they are helping to instill confidence in the Easterner and furthering a much needed system, that of community help."

### Building Firms to have Exhibit

A permanent building material exposition is being planned by the members of the Spokane Builders' Exchange. Every building material house in Spokane and the Inland Empire is expected to maintain a display, showing samples of their goods, and to keep the display up to date, in the quarters of the Builders' Exchange on the seventh floor of the Hutton Building.

Contractors and builders will be able to visit the rooms of the Exchange and inspect the wares of all the different concerns represented in Spokane, and will be saved the trouble of visiting a score of separate offices.

It is planned to establish regular Exchange hours, when the companies having exhibits in the room will be allowed to have representatives present to explain the merits of their goods to all visitors. The Exchange will probably be open in this manner from 11 o'clock until 1 o'clock each day. At other hours of the day material men may bring customers up to inspect their goods, but will not be expected to keep a representative in the room.

Bids are being received by Earl Constantine, Secretary, for the necessary shelving and cases for holding the exhibits. These cases will be built much after the plan of sectional bookcases and space will be rented out to the various material men for their exhibits.

No large advertisements will be allowed and the only indication of the owner of the exhibit will be a neat name plate, and these name plates will be uniform in shape and style. A small space in the shelves may be reserved for advertising literature.

Exhibits will be made of brick, terra cotta, sand, lime, cement, patent plasters, metal lath, fancy finishing lumber, and, in fact, everything used in construction work will be on exhibition in the hall.



### M. L. Kline in Trouble

The Portland plumbers' trust is accused by Louis F. Brayton, Portland manager for the Stone & Webster Engineering Corporation, of conspiring to delay construction of the Wilcox Building, which is now under way at Sixth and Washington streets.

Mr. Brayton has instructed the attorney for his company to begin the preparation of a suit against M. L. Kline, a member of the alleged trust, to compel fulfillment of a contract to supply plumbing material and fixtures to Stone & Webster. Heavy damages are asked, and a dozen master plumbers are made parties defendant to the suit.

Trouble for Stone & Webster arose from the fact that they undertook to do their own plumbing instead of subletting the contract. Although they have a contract with M. L. Kline, alleges Manager Brayton, Kline has refused to supply the material. It is alleged that Kline was formerly under boycott by the Portland Master Plumbers' Association and that the boycott was removed with the condition that he would refuse to furnish material to Stone & Webster. Kline has fulfilled his part of the contract.

"This situation has been forced on us," said Mr. Brayton. "We are determined that the Wilcox Building shall be erected, and that it shall be completed on time. We are working under State and United States laws and do not propose that any local plumbers' association shall fix conditions under which we shall operate."

Development of the controversy with Kline up to the point where Kline refused to furnish further material to the contracting company is shown in Brayton's daily notes. The following was written under date of April 28:

I met Mr. Kline by appointment at his office. I talked to him in the presence of Mr. Follett, his assistant manager. We discussed the order which we had placed with him for the plumbing fixtures for the T. B. Wilcox Building. I told Mr. Kline and Mr. Follett most emphatically that in spite of any objections of the plumbers we were going right ahead with the plumbing in the Wilcox Building, and that we would expect him to furnish the fixtures. He said that he would like to furnish us all the material on the Wilcox Building but that unfortunately if he furnished us the goods as the conditions stood it would place us in an unfortunate position with the Master Plumbers' Association.

I showed him a letter from the Crane Company in which they stated that if we would open a plumbing shop they would be pleased to sell us anything that we wanted. He assured me he would do the same thing. I told him that I had already made arrangements to open a plumbing shop at 246 Second street, and that I was advising Crane Company accordingly. He made several suggestions as to how I should word the letter to Crane Company, and made the following remark: "I guess, Brayton, between the two of us, we can pay for your sign over the door." I declined his offer with thanks.

Mr. Kline told me that he believed that the Crane Company was back of the stand which the master plumbers were taking, as he (Kline) had been getting more of our business than had the Crane Company. As he expressed it, "It is bread and butter to Nitchy." I told him that so far as any record we had was concerned, Mr. Nitchy seemed perfectly willing to sell us goods so long as we would establish a shop.

Mr. Kline said that there had already been a master plumbers' meeting to consider the case of Stone & Webster,

but that the meeting was packed by Crane's plumbers, and he (Kline) did not let the meeting come to a head.

In the following notes Mr. Brayton shows his inability to get bids from the various plumbing supply houses:

April 29—Mr. Barrow, of the Crane Company, called for the bill of material today as requested in our letter of yesterday. We notified Kline and the Gauld Company by telephone that our bill of material was ready for figures and that the figures would be due at 10 o'clock Tuesday morning.

May 1—The Gauld Company was notified by telephone to get out bill of material, but Mr. Kline notified us that he was too busy to figure at the present time.

May 2—No figures from any of the jobbers came in today, although they were due at 10 this morning. The master plumbers held a meeting but according to Mr. Kline's report to us nothing was accomplished on account of it not being a full meeting, although the question of whether the master plumbers would permit Kline to sell us plumbing fixtures was discussed.

Under date of May 3, Mr. Brayton noted that a bid on piping and fittings had been received from the Crane Company, but there was no bid from the Gauld Company. He called up Mr. Kline, who objected at first, saying the Gauld Company was making a play "with the master plumbers to get him in wrong." When he learned that the Crane Company had sent a bid he promised to send in one.

May 4 Mr. Brayton noted that the figures from Kline had not been received and that he had called up the establishment of Kline and given him 15 minutes to send in the figures so they would be received before the meeting of the Master Plumbers' Association that afternoon. No figures were sent. Under the same date, Mr. Brayton continues:

I understand that at the plumbers' meeting today Mr. Kline was notified that he had been under boycott for the past year, and that an understanding was arranged between Mr. Kline and the plumbers' Executive Board by which this boycott would be removed from Kline, provided he would decline to supply the fixtures to the Stone & Webster Engineering Corporation. In other words, the master plumbers and Kline entered into an agreement the effect of which would be to delay the Wilcox Building and injure the reputation of the Stone & Webster Engineering Corporation.

Mr. Brayton's diary under date of May 8 shows that an order was placed with Kline for a bill of plumbing material to be delivered at the Stone & Webster plumbing shop at 246 Second street, the object being to compel Kline to take a stand. Next day it is noted that the order was refused and that Kline returned copy of Stone & Webster's contract, also requisitions, with the announcement that none of the orders would be filled. It was also noted that the Crane Company had filled an order given by Mr. Brayton, delivering the material.

Registered letters were sent by Mr. Brayton to the following members of the Master Plumbers' Association notifying them that they would be held jointly responsible with M. L. Kline in the suit to be instituted: George Connolly, President of the Association; George Doughty, Manager of the Hassalo Engineering Company; J. F. Lynds, Sam Murhard and William Muirhead, of Muirhead & Murhard; P. J. Melis, Fred Rosenau, of Rosenau & Schneller; T. J. Rowe, Otto Wacknow, J. R. Widmer and A. G. Rushlight.

### Among the Architects

Lewis I. Thompson has moved to 520 Yeon Building. Goodrich & Goodrich have moved to 1008 Yeon Building.

Arthur J. Maclure, formerly located at Los Angeles and San Francisco, has opened an office at 408 Lewis Building.

W. B. Bell has taken larger quarters at 633-34 Worcester Building.

George Ray, architect and structural engineer, has associated himself with W. B. Bell at 633-34 Worcester Building.

H. H. James, formerly located at Spokane, has opened offices at 701 Board of Trade Building.

Cutter & Malmgren, of Spokane, have moved from the Exchange Bank Building to the Western Union Life Insurance Building.

R. C. Sweatt has moved from the Peyton Building to 416 Realty Building.

H. G. Ellis, of Spokane, has moved from the Paulson Building to 415 Realty Building.

Alfred Jones, of Spokane, is making an extended trip through Mexico and will not return until about June 15th.

J. N. Goodwin has been appointed Building Inspector of Spokane.

Clarence Z. Hubbell, of Spokane, has moved from the Hutton to the Jones building.

John F. Cody, of Spokane, has received his appointment as Building Inspector at Boise, Idaho.

Sabro Ozasa, of Seattle, has moved from the Central Building to the Oriental Trading Co. Mr. Ozasa has been commissioned to prepare the plans for a \$100,000 hotel at Tokio, Japan, and will leave for there soon.

Thomas L. West, formerly located at 911 White Building, Seattle, has located at 216 Farmers' & Fruit Growers' Building, Medford, Oregon.

Wayne L. Mills has become associated with W. F. Tobey at 220 Sherlock Building.

Gibson & Cahill have withdrawn from the erection of the Multnomah Hotel. H. Henselman is now in charge.

Harold H. Gennold, formerly with C. Lewis Wilson, of Chehalis, is now located at 661 Empire Building, Seattle.

Allan B. Stroud, of Stroud & Keith, Architects, 414 Cotton Building, Vancouver, B. C., was a recent visitor to Portland.

Johnson & Mayer, formerly located in New York, is a firm of local architects which has opened offices in the Selling Building.

Architects Gibson & Cahill have dissolved partnership. Mr. Gibson is going to Alaska, while Mr. Cahill expects to return to practice in San Francisco.

R. E. Heine, local representatives for Reid Bros., San Francisco, has returned from a trip to that place.

W. A. Carpenter, formerly practicing at Vancouver, Wash., has become associated with the H. M. Fancher Co., at 301 Henry Building.

O. L. Broline, formerly of Seattle and Chicago, has opened an architectural office at 1021 Board of Trade Building.

Architect H. Hanselmann, with headquarters at 621 Henry Building, has succeeded Gibson & Cahill on the

Multnomah Hotel. Mr. Hanselmann was formerly with Schacht & Son, and comes here direct from Burnham's office.

McNeil & Wallwork are former Minneapolis architects who have located at 702 Swetland Building.

The O. W. M. Co., with G. C. Manning as Manager, are new architects and engineers, located at 510 Gerlinger Building.

The following are the officers and directors of the Spokane Architectural Club for the ensuing year: Julius A. Zittel, President; C. Z. Hubbell, Vice-President; F. P. Rooney, Treasurer; H. C. Whitehouse, Secretary. The Directors are Julius A. Zittel, L. L. Rand, F. P. Rooney, H. C. Whitehouse, C. Ferris White, C. Z. Hubbell and J. M. Goodwin.



### Trade Notes

Mr. Luce, Second Vice-President of the Wells Bros. Co., contractors of New York and Chicago, was a recent visitor in Portland.

H. A. Noble, formerly connected with the local office of the Concrete Steel Products Co., has gone to Buffalo, New York, where he will have charge of that office for his company.

Exhibitors having space in the Builders' Exchange at Seattle have been notified to remove their displays owing to lack of interest.

W. H. Denny & Son, of Seattle, have moved from 707 White Building to 424 Northern Bank Building.

The Lake Union Brick Co., of Seattle, is adding six tunnels to their drier so as to enable them to increase their daily capacity to 36,000.

The C. Ellison Parker Co., interior and architectural decorators, and formerly of New York, are located at 1928-30 Second Avenue, Seattle, where they are carrying exclusive designs in both antique and modern furniture, carpets, rugs, wall papers, draperies and tapestries. They make a specialty of planning interior work and decorations.

Fred C. Cook, representing the Kawneer system, has moved from the Wells-Fargo Building to 510 Lewis Building.

Victor S. Persons, of the Concrete Steel Products Co., is making an extended business trip to Seattle and Vancouver, B. C.

S. F. Cooke, local Manager of the Holmes Disappearing Beds, has just completed the installation of 88 beds in the Hendricks Apartments, 11th and College Streets, and the Dekum Apartments, 20th and Washington Streets.

The Dallas Brick & Tile Co. is the name of a new Oregon industry, with G. M. Partridge as Manager. They are now constructing their first kiln.

E. D. Timms has been spending some time at Collins' Mineral Springs for his health.

Alex Gordon is local agent for "Anaglypya" high relief ceilings, friezes and wainscots, manufactured by the W. H. S. Lloyd Co., of New York.

Dr. J. R. Wetherbee is representing Portland at the National City Builders' Convention being held in Philadelphia.



## Abstract of a Paper Delivered by J. F. Stevens before the Oregon Society of Engineers

(A paper by Mr. Stevens on the Cost of Operation of the Canal will appear in an early issue.)

The Act of Congress which authorized the President to proceed with the construction of the canal, placed almost unlimited power in his hands as to details of route, type and size of canal, the chief limiting clause which, it may be noted, leaves much to his judgment, reading as follows: "The canal shall be of sufficient capacity and depth as shall afford convenient passage for vessels of the largest tonnage and greatest draft now in use and such as may be reasonably anticipated."

In order to obtain the advantages of the best engineering advice upon the many general problems involved, the President appointed a Board of Consulting Engineers, the members being eminent in their profession, both American and European. After a visit of inspection to the Isthmus and due consideration, the Board made two reports, the majority one favoring a sea-level and the minority a lock plan, both reports, however, concurring in the other general features. After a long time, the whole matter was referred to Congress, which, after examinations and debates, voted in favor of the minority, or lock-level plan—the one under which work is now being prosecuted.

It would require much more space than is now available to sum up even the various reasons which I believe justified the final decision in favor of the lock canal. I went to the Isthmus as Chief Engineer, rather in favor of a sea-level plan, which I abandoned after personal study of the conditions. As I had reason to believe my influence was quite potent in the decision, I feel that this one service to the country is enough for a lifetime, in helping to save the fatal consequences of a wrong conclusion, as I know a decision in favor of a sea-level canal would have been.

An extract from a report to the Canal Commission, under date of January 26, 1909, expresses in brief my position: "The sum of my conclusions is, therefore, that all things considered, the lock or high level canal is preferable to the sea-level type, so called, for the following reasons: It will provide a safe and quicker passage for ships, and therefore will be of greater capacity. It will provide, beyond question, the best solution of the vital problem of how safely to care for the flood waters of the Chagres and other steamers. Provision is made for enlarging its capacity to almost any extent at very much less expense of time and money than can be provided for by any sea-level plan. Its cost of operation, maintenance, and fixed charges will be very much less than any sea-level canal. The time and cost of its construction will be not more than one-half that of a canal of the sea-level type. The element of time might become, in case of war, actual or threatened, one of such importance that, measured not by years, but by months or even days, the entire cost of the canal would seem trivial in comparison. Finally, even at the same cost in time and money for each type, I would favor the adoption of the high-level lock canal plan in preference to that of the proposed sea-level canal. I therefore recommend the adoption of the plan for an eight-five-foot summit-level lock canal, as set forth in the minority report of the Consulting Board of Engineers. Very respectfully, Jno. F. Stevens, Chief Engineer."

To go back to the time when the United States took formal possession by purchase from the French company and by treaty with Panama. This commission, appointed

by the President to supervise the work, proceeded to the Isthmus, began work of organization of the preliminaries, and the thousand and one details naturally pertaining to such an enterprise received under such conditions, in a tropical climate—and the mention of the latter condition brings up directly to the underlying important feature of sanitation, and the consequent good health of employes, without which nothing but failure would result.

Probably no spot on earth previous to the year 1906 had—and it largely deserved it—a worse reputation for diseases of various kinds, than Panama. It will never be known how many employes lost their lives during the French occupancy. Very little was known of modern sanitation, at least very little was practiced by them, and even if their finances had held out, it is probable that death and disease would have conquered them in the end. But by the knowledge our army medical men had gained in Cuba as to the true cause and means of preventing yellow fever, that white man's scourge of the tropics has been eliminated, and the percentage of malaria and malarial fevers has been reduced more than one-half. Colon, at the northern, and Panama, at the southern, terminus of the canal, were, up to 1907, two of the most forbidding, dirtiest places on earth. Today, they are and have been for more than four years past, especially Panama, cleaner and more sanitary than the average American city; paved throughout, provided with modern sewerage and water systems, they are at once a tribute to the energy and intelligence of those Americans who made them possible, and a standing reproach to those Americans who for the sake of a little printed notoriety have so far prostituted themselves as to send forth to the world statements which were not only false, but palpably known by themselves to be false when issued.

Recently I have noticed in the local newspapers very flattering comments on the present conditions as regards streets, sewers, and water supply in Colon and Panama.

These are all true, but I want to remark, in justice to the engineers in civil life who designated and built these works and wrought these changes, that all this was done prior to the advent of the army engineers, and was not done by the latter, as stated by the articles of the press to which I have referred.

This work of sanitation and municipal improvement in the two cities has cost the United States a very large amount of money, which the treaty provides shall be repaid after a long term of years, and there is reasonable probability we shall be repaid, but if we are not, the value of this work to us will be four-fold of all it cost, in the health and life of our employes.

The length of the proposed canal from deep water to deep water, will be about 50 miles, the width varying, as below, these widths as noted being at the extreme bottom of the canal sections.

From the Caribbean sea, near Colon, 1,000 ft. for about 7 miles to Gatun dam and locks; from Gatun locks a minimum width of 1000 feet through Gatun lake (to be formed by Gatun dam) over a distance of about 26 miles; thence about 2 miles of a width of 500 ft. to the north end of Culebra cut, then 300 ft. wide for about 9 miles, to the locks of Pedro Miguel, the south end of Culebra cut; then through Lake Sosa, some 5 miles, 1,000 ft. minimum width, to the locks of La Boca; then 3 miles to deep water in the Pacific Ocean with a width of 1,000 ft.

These dimensions are given in some detail, as showing, from their generous proportions, that a fair rate of speed can at all places be maintained by the ships while passing through the canal, excepting through the locks proper, which comprise but an insignificant portion of the entire distance.

A modification of the plans for the locks and dams near the southern end of the canal has been made, which will be referred to later on.

A brief study of the map will show that owing to the peculiar twist of the Isthmus near its narrowest part, the actual direction of the canal is not east and west, as popularly supposed, but northwest at the Atlantic end, to southeast at the Pacific end, and that in fact Panama on the Pacific side is 22 miles east of Colon on the Atlantic side, so that the use of the terms north and south of the canal is entirely proper.

In formulating the plan for any canal at Panama the one great overshadowing engineering problem that had to be solved before success could be expected was the control of the flood waters of the Chagres river and its large tributaries. This river, rising in the mountains of the Darien country some 100 miles east of the canal, flows almost directly west, thence by an abrupt turn its course changes to the north and northwest, emptying into the Caribbean sea about 5 miles west of Limon bay, in which the canal finds its northern terminus. Thus, for nearly thirty miles the canal follows the valley of the Chagres river—a stream which fluctuates in the dry season from a flow of 600 to nearly 110,000 cubic feet per second in the rainy season.

At several points along this part of the river the valley narrows in, and at one point (Gatun) it is less than  $1\frac{1}{2}$  miles in width, at an elevation of 100 ft. above sea level, and it is at this point suitable foundations have been found to exist, the gigantic works known as the Gatun locks and dam were projected, and are now under course of construction. The dam is to be of earth, will be about 7,800 ft. long by 100 ft. in width on top, and  $1\frac{1}{2}$  miles wide, or thick, at the bottom. It will be 135 ft. high, and will contain approximately 22,000,000 cubic yards of material, the greater part of which will be placed by powerful hydraulic pumps, thus insuring solidity of construction that only nature under favorable conditions can rival. This material will be clay, with a very slight mixture of fine sand—an ideal material, to produce, so placed, a mass comparable only to a mountain—one that will resist water, decay, earthquake, or any known force of nature or man, within imaginable limits.

The truly enormous proportions of this dam were a concession, and a lame one, by the commission to the fancied criticisms of the public as to the stability of a strictly earthen dam. It was my intention always to at the proper time reduce the section of the dam to a reasonable limit, and I am pleased to know it has been done, and the fact remains that even now, as being built, it has a very large factor of safety, and will still contain a mere trifle—only about 17,000,000 cubic yards of material.

This dam will, by closing up the valley of the Chagres river, form a lake of some 30 odd miles in length, as measured by the main valley, and covering approximately an area of 140 square miles—really a vast inland fresh-water sea; the elevation of the water being at normal 85 feet above mean sea level, this water above the dam and the sea-level waters of the Atlantic ocean will be brought to the locks by the seven miles of open, 1000-foot-wide channel mentioned above. On the other very high ground, nearly in the center of the dam, will be constructed the necessary regulating works by which the

height of the water in the lake will be controlled, storing it up for the dry, and allowing it to flow gradually away during the flood periods, as conditions may require.

These regulating works, and main locks, also, will rest their entire length and breadth on rock—not earth, not mud, but rock, really a species of sand rock sufficiently hard to insure first-class foundations, and to set at rest all fears of the stability of the works. That the character of these foundations is first class was known long ago to the people directly responsible for them, and has been amply proven by numerous borings and test pits, but to satisfy a senseless clamor set up and encouraged by the ignorant critics, the Secretary of War—in whose hands, next to the President, is the general direction of all canal affairs—took a committee of three of the best known and ablest of our American engineers last year to Gatun. These gentlemen, after a thorough personal examination, concurred in a report which fully confirmed all the previous ones of the chief engineer, and which should have settled for all time the question raised; but very recently the commission has given out the statement—quite superfluous—that additional borings have been made, and that rock exists everywhere under the proposed locks, and a splendid foundation is assured—another case of the Dutch taking Holland.

The earthen dam will rest on a stratum of impervious clay, nearly 200 feet thick, lying on the same kind of rock that the locks will rest upon. Altogether, the foundations of both locks and dams are ideal, and all notion to the contrary can be dismissed from the mind.

The control of the flood waters of the Chagres is simple, and the plan can be easily understood by anyone, whether engineer or not. It is merely accomplished by the formation of a lake, into which the flood waters will pour, at such distances from the sailing line of ships that these flood waters can be entirely ignored.

Leaving the lake, the line of the canal enters the famous Culebra cut, which will be about nine miles in length, and is directly through the backbone of the Cordilleras, and the watershed between the Atlantic and Pacific oceans. The mountains along the line of the canal rise to an extreme height of some 120 feet above the sea, and probably it was from some of these peaks that Balboa first caught sight of the peaceful ocean, the waters of which ripple as calmly and which present a view at Panama that for loveliness is said to rival that of the Bay of Naples.

The bottom of the canal prism in the cut, allowing for the 40 feet of water, will then be 45 feet above sea level, the surface of the water being the same elevation as that of Gatun lake, or plus 85. At the highest point the top of the cut was originally some 280 feet above the bottom, but the French dug away some 120 feet, and now in depth there are about 120 feet yet to go down. This figure, however, does not adequately express the relative amount of work to be done. When the United States assumed charge of the enterprise changes in line, increases in width, a more proper adjustment of slopes, and so forth, which were made, all contributed to swell the total yardage to be moved. An approximate summary of the various items showed about 70,000,000 cubic yards of excavation to be taken from the prism in Culebra cut, of which probably 80 per cent is rock, of different degrees of hardness, and this vast amount of material was not to be dug out and placed in waste banks immediately alongside of the excavation, but the greater part must be hauled miles by railway trains to find room for disposal.



The work of drilling, of loosening up by blasting ready for the big steam shovels, while appalling, was only one feature. Hundreds of miles of track must be laid, locomotives by the hundred, cars by the thousand, and all the myriad special adjuncts of shops and machinery, requisites to repair and maintain—all such features had to be created, and when I reached the zone in July, 1905, I think I may truly say I faced about as discouraging a proposition as ever presented itself to a construction engineer.

Passing to the south end of Culebra cut, the locks and dam at Pedro Miguel are reached. Here, by duplicate locks, with a lift or drop of 30 feet, as the case may be, the change from the 85-foot level was to be made to the level of Lake Sosa, 55 feet above the level of mean tide in the Pacific ocean. The plan adopted in 1906 was to build two earthen dams at La Boca, near the shores of Panama bay, closing up the valley of the Rio Grande, in a manner precisely similar to the plan adopted at Gatun, thus forming a lake four miles in length, giving a minimum depth of 45 feet of water, with a sailing channel not less than 1000 feet in length. In Sosa mountain—an isolated rock butte—against which the dams were to rest, two locks in flight, in duplicate, each with a drop of 27½ feet, were to be constructed, thus delivering ships practically into a three-mile sea-level channel leading to deep water in Panama bay and the Pacific ocean.

Thus the waterway really was to consist of one stretch of canal; then of a long, wide, deep lake (Gatun), then throughout a channel (Culebra cut), of varying widths; then through a smaller lake, and finally through another channel into the waters of the Pacific ocean. This was practically the plan of the minority of the Consulting Board of Engineers, but was later modified to this extent:

It was decided to build the dam and locks at the southern terminus, some three and a half miles further inland, and thus to extend the sea level up and through what has been known as Lake Sosa. This—particularly if the press accounts are correct—is a wise move. For long months I fruitlessly sought by borings to discover suitable foundations for locks and dam at or near Miraflores, the point finally selected. Since that time, however, changes in the plans of the locks, having the effect of dropping the walls and the bottom of the same, have rendered sites available now for these works, that a year ago were not tenable, and, too, it is an open question if such changes in the lock plans, if not altogether unnecessary and questionable, have not added millions to their cost, far in excess of any saving in changes of location, and have not added to their efficiency, economy or safety of operation.

In regard to this change, the writer quotes from the same report made by him to the Canal Commission, referred to previously, as of date January 26, 1910: "As regards the plan and alignment of the canal at the Pacific end, I am still inclined to my former expressed opinion that, on account of the military and sanitary features, the location of all the locks at Miraflores and Pedro Miguel, with the necessary dam at the same place, instead of part, will be found more satisfactory; but as the latter plan will cost about \$6,000,000 less to construct than the former one, I am ready to waive my views in favor of the latter plan, although simply on account of the difference in the estimated cost," which goes to show that the matter was then seriously considered, and that "there is nothing new under the sun."

The first, or so-called Walker Commission, was unfortunate in many ways, which are immaterial here. The

second commission, the one I had to do with, was more fortunate in its make-up, but it had its limitations. When I reached Panama in July, 1905, conditions could have been much worse, but they were bad enough. No real start at any effective work on the canal proper had been made, no adequate organization had been effected, sanitary reforms were really just beginning, little new plant had been provided and little that was absolutely necessary had been ordered. In the organization which existed no co-operation was apparent, and no systematic plans, as far as I could discover, had been formulated towards the carrying out of the work along lines promising any degree of success.

And, worse than all, over and above, in the diseased imagination of the disjointed force of white employes hovered the angel of death, in the shape of yellow fever, a number of cases of which were then prevailing, and from which several deaths had occurred. What many of the intelligent men seemed to expect was an order from Washington to abandon the work and go home. To provide housing for this army, to properly feed, to instill into it faith in the ultimate success of the work, to weed out the faint-hearted and incompetent, to create an organization fitting to undertake the tremendous work, and to fill its ranks with the proper material, was a task of heroic proportions. No one will ever know, no one can realize, the call on mind and body which was made upon a few for weary months, while all the necessary preliminary work was being planned and carried forward, and no attempt was, or could be, made to carry on actual construction until such preliminaries were well in hand. And the only gleams of light and encouragement were weekly arrivals of newspapers from the States, criticising and complaining because the dirt was not flying.

While the French turned over to us square miles of engines, cars, dredges, and tools of every description, very few of them were of any value and those that were used were only used until proper modern ones could be substituted, but as time wore on, as new plant arrived and was put in service, as proper food and housing were provided, as improved health conditions prevailed, as the majority saw that, unconsciously, perhaps, to them, a real effective organization, working steadily but surely towards a definite and intelligent end, had been made, the whole situation changed for the better; and that the organization was effective, the plant well designed, and all the preliminary work was fairly done is evident from the fact that the construction of the canal since the real beginning, with little addition to the plant already in hand or under order, or material change in organization, has gone steadily on, and in amount has surprised the friends and confounded the enemies of the enterprise.

I want here to express my confidence and appreciation for Colonel Goethals, and his corps of able assistants, who are in charge of this work. I have always had an admiration for our army engineers, and I am sure, if, as I have no doubt, the fighting arm of our country is equal in efficiency to the engineering arm, we will all be very proud at the results of whatever they may undertake, be it in war, or canal building.

Reference has been made to the importance of the Panama railroad to the work of construction; lying as it does immediately along the line of the canal, it affords the only practicable means for disposing of the millions of yards of waste material coming from Culebra cut. Huge systems of tracks have been planned and laid in the cut, on which are handled hundreds of work trains

loaded by the steam shovels with rock and earth, these systems of work tracks being connected at proper intervals with the main tracks of the Panama railroad, over which trains run to the dumping ground, or waste banks, some of the latter being 15 miles distant.

The rejuvenation of the Panama railroad was one of the hardest problems that had to be met in getting ready to push the canal construction. It had but a single track, practically no sidings, or station buildings, a worn-out telegraph line, no terminals worthy of the name and motive power and rolling stock that were obsolete 20 years before. While a fair amount of new equipment had been ordered, little or nothing had been done to place the road in proper shape to handle the heavy business thrown upon it. Traffic, both that pertaining to the coal and commercial, local and through, was nearly at a standstill, thousands of tons of freight were piled in cars, warehouses, and docks, and some of these shipments had lain from three months to a year and a half in the hands of the railroad company, and in many cases even the shipping papers and records of this freight had been lost.

All these congested conditions had to be cleaned up, the road rebuilt, reorganized in its operating features and personnel, taking care at the same time of a constantly increasing traffic. All this was accomplished, so that the Panama railroad in 1907 was placed in a condition, both from a physical and operating standpoint, fit to compare favorably with the average of our best American roads.

The creation of Lake Gatun necessitated the relocation and rebuilding of some forty miles of the railroad, to place it above the lake level, which work is already under way, and will be completed before the work on the canal proper is done. Meanwhile the road is handling the canal business as well as the commercial business; the latter was, however, badly handicapped by the very inefficient service of the Pacific Mail Steamship Company, whose ships formed the connecting link between it, at Panama, San Francisco, and the various ports of call along the Central American and Mexican coast.

Early in 1895 I went on record before congressional committees that the work should be done, and the canal opened by January 1, 1915, and I still hold this opinion. As before stated, the limiting factors are Gatun locks and Culebra cut. No night work has yet been done at either place.

### New Lien Precedent is Set

That sub-contractors are entitled under the State law to prosecute mechanics' lien cases either within 30 days after the material is furnished or within 30 days after the work involved is completed, was a ruling made by Judge Gantenbein, establishing a new precedent in local law practice. It was previously believed that the law permitted sub-contractors to file their suits only after the work was done, but Judge Gantenbein ruled that sub-contractors had an advantage over the original contractors in being able to sue also within 30 days after material is furnished.

The suit that brought out the ruling of the court was that of R. A. Hume against Edward Ryan & Son, involving the repair of the Chamber of Commerce building. Hume was suing for \$527.30, but a demurrer was entered by the defendants, who contended that he had brought suit before the time in which he was entitled to do so. Judge Gantenbein overruled this demurrer.

German architects are making more and more use of glass bricks in cases where walls instead of windows are essential, while light must be provided.

### The Builders' Club

The Builders' Club has effected permanent organization and has elected the following officers and directors: E. B. White, President; E. E. Angell, Vice-President; L. F. Danforth, Secretary; F. W. Wagner, Treasurer; D. W. Ward, Thos. Muir, J. Ruedy, W. F. Blaesing, H. B. Loveridge, F. R. Jacobsen and G. E. Weaverson, Directors.

The club has leased permanent quarters at the northeast corner of Second and Alder streets, giving them an assembly room 47x95 and a smaller room 50x60. Space will be provided for the display of materials by the dealers. An Assistant Secretary and stenographer will be on duty to take care of the requirements of the members.

The Club has a membership of about 150 at the present time.

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